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Oct. 18-21, 2016

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Safety & Health Conference

"Safety is not an object nor something you can measure! It's a culture, a value."

State of Affairs with Safety and Pressure Relief Devices

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NATIONAL BOARD 95 YEARS

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

National Board Inspection Code Founded 1919; Registration 1921

ASME SETTING THE STANDARD

ASME Boiler and Pressure Vessel Code published in 1915

Boiler Safety Act

ASME Boiler and Pressure Vessel Code published in 1915

Section 1-Power Boilers provides requirements for all methods of construction of power, electric and miniature boilers; high temperature water boilers, heat recovery steam generator and certain fired pressure vessel to be used in stationary service and power boilers used in locomotive, portable and traction service.

Authorizing the use and application of the "V" mark for the Assembly of Safety Valves for Power Boilers

ASME Boiler and Pressure Vessel Code published in 1915

Section VII-Pressure Vessels provides requirements applicable to the design, fabrication, inspection, testing and certification of pressure vessels operating at either internal or external pressures exceeding 15 psig. Such vessels may be fired or unfired.

Authorizing the use and application of the "UV" mark for the Assembly of Pressure Vessel Relief Valves

ASME Boiler and Pressure Vessel Code published in 1915

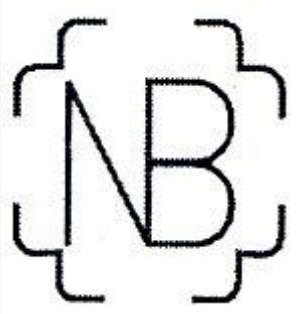
Section IV-Heating Boilers provides requirements for design fabrication, installation and inspection of steam heating, hot water heating, hot water supply boiler and potable water heaters intended for low pressure service that are directly fired by oil, gas, electricity, coal or other solid or liquid fuels.

Authorizing the use and application of the "HV" mark for the Assembly of Safety Valves for Low pressure steam heating boilers at 15 psi only. Hot water supply and boilers to 160 psi or 250^{o} f max.

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

The National Board- established in 1921 a system of "**registering and recording ASME boilers**." This system includes two parts:

- qualifying all inspectors to a common set of requirements and issuing a National Board commission to successful candidates
- authorizing manufacturers to stamp a National Board number on boilers inspected by a National Board Commissioned Inspector.



Authorizing the use and application of the "NB" mark to specified Pressure Relief Devices in accordance with the provisions of the National Board.

THE
NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

National Board Inspection Code
First Published in 1946

The National Board- provides standards for the installation, inspection and repair and/or alteration of boilers, pressure vessels and pressure relief devices. It has become an internationally recognized standard, adopted by most US and Canadian jurisdictions.

The **NBIC** is organized into three Parts :

- **Part 1 Installation-** includes meeting specific safety criteria for construction, materials, design, supports, safety devices operation, testing and maintenance.
- **Part 2 Inspection-** information on personnel safety, non-destructive examination, tests, failure mechanisms, types of pressure equipment, fitness for service, risk-based assessments, and performance-based standards
- **Part 3 Repair and Alterations-** information and guidance to perform, verify and document acceptable repairs or alterations to pressure retaining items regardless of code construction.

THE
NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

MEMBER
JURISDICTION

The State of Kansas Boiler Safety Act- the laws, rules and regulation governing boiler construction, installation, inspection, maintenance and repair of boilers. Administered by The Office of the State Fire Marshall Boiler Safety Unit.

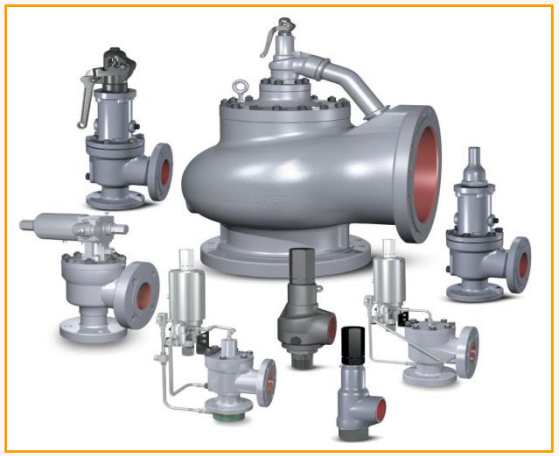
Enacted 1953; repealed 1975; reinstated 1977; latest amendment to law October 1998; latest amendment to rules and regulation November 2006

THE
NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

The National Board- offers the Certificate of Authorization and VR Stamp for the repair of pressure relief valves. Requirements are described in NB-514, Accreditation of VR Repair Organization.

Authorizing the use and application of the "VR" mark for Machining, Testing and Valve Repair for Steam, Air/Gas & Liquid.

PRESSURE RELIEF VALVES



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WHAT IS A SAFETY VALVE

A device used for steam or vapor service operating automatically with a full-opening pop action and recloses when the pressure drops to a value consistent with the blowdown requirements established by governing code or standard.

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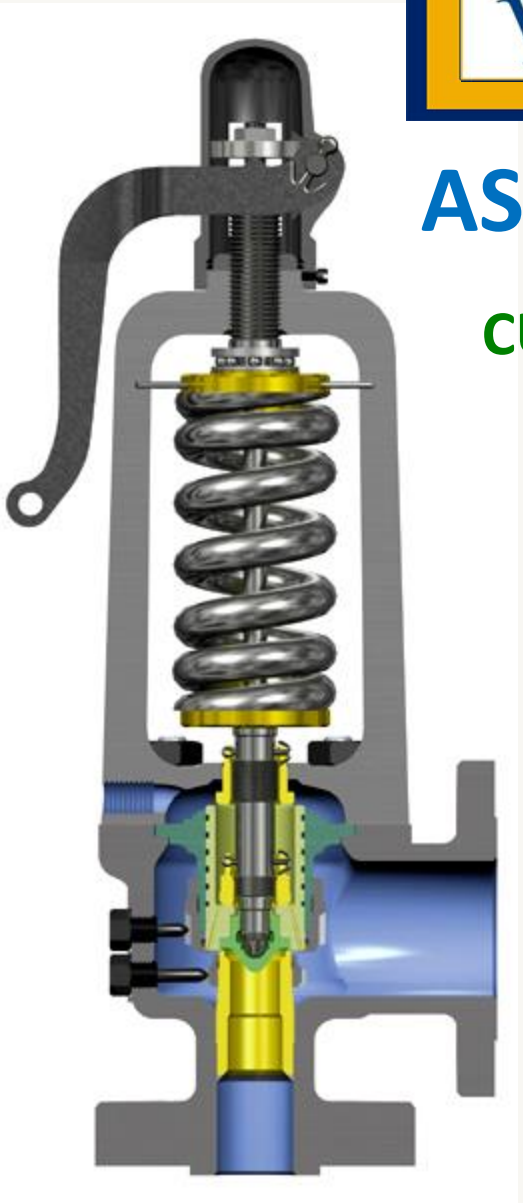

ASME Section I – 2 Ring Design

CURRENT DESIGN TOP GUIDED PRESSURE RELIEF VALVES

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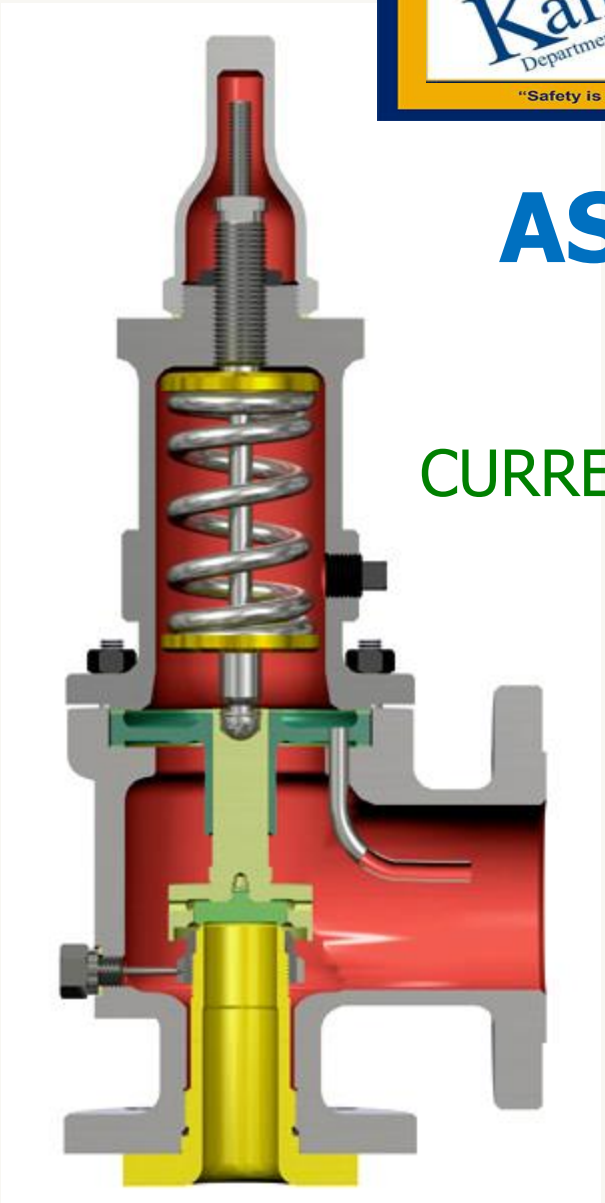

ASME Section VIII – 1 Ring Design

CURRENT DESIGN TOP GUIDED PRESSURE RELIEF VALVES

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WHAT IS A RELIEF VALVE

A device typically used for liquid service, operates automatically by opening proportionally to increase in pressure beyond the initial opening pressure and recloses when the pressure drops below the opening pressure.

WHAT IS A SAFETY RELIEF VALVE

An automatic pressure relieving device which may be used as either a safety valve or relief valve depending upon the application

Conventional Spring Actuated

Balanced (bellows) Actuated

WHAT IS A PILOT VALVE

A pressure relief valve in which the major relieving device is combined with and is controlled by a self activated auxiliary pressure relief valve

- **May be used on *steam, vapor,* or *liquids***
- **Not ASME approved for Section I boiler service**
- **Recently approved for Section I economizer service**

PILOT VALVE ADVANTAGES

- Smaller operating gaps (Typically 1/2%)
- Eliminates back-pressure problems
- Offers remote sensing to overcome chatter due to inlet pressure drop.
- Choice of modulating or pop valve action
- Size & weight advantages
- Dual pilots

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WHAT IS A TEMPERATURE AND PRESSURE SAFETY RELIEF VALVE

A device typically used on a potable water heater. In addition to its pressure relief function it also includes a temperature regardless of pressure.

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WHAT IS A REPTURE DISC

A device that is classified as non-reclosing since the disc is destroyed upon actuation.

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Non-Coded Relief Valves are similar in manufacturer to ASME Code Valves except they do not have the ASME Code Designator

V

UV

THE
NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

National Board of Inspection Code
Part 2 ----Inspection

2.5.7 TESTING & OPERATIONAL INSPECTION OF PRESSURE RELIEF DEVICES

Pressure relief valves must be periodically tested to ensure that they are free to operate and will operate in accordance with the original code of construction.

Testing should include:

- Device set or opening pressure
- Reclosing pressure
- Seat leakage evaluation
- Tolerances specified in the original code apply

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

2.5.7 TESTING & OPERATIONAL INSPECTION OF PRESSUR RELIEF DEVICES

MAY BE DONE BY OWNER OR A CONTRACTOR IN THE FIELD OR AT A QUALIFIED TEST FACILITY.

CALIBRATED EQUIPMENT
WRITTEN PROCEDURE
AUXILIARY LIFT DEVICE
USE OF 'LIFT' LEVER'

2.5.7 TESTING & OPERATIONAL INSPECTION OF PRESSUR RELIEF DEVICES

Testing Results:

- **VALVE STUCK CLOSED – REMOVE SYSTEM FROM SERVICE UNTIL PRV CAN BE REPAIRED**
- **IF SET POINT IS FOUND TO BE OUT OF TOLERANCE: MINOR ADJUSTMENTS (NO MORE THAN 2X THE PERMITTED TOLERANCE) SHALL BE MADE BY A NBBI ACCREDITED ORGANIZATION**

2.5.7 TESTING & OPERATIONAL INSPECTION OF PRESSUR RELIEF DEVICES

Testing Results:

- **MAJOR ADJUSTMENTS MAY INDICATE THAT THE VALVE IS IN NEED OF DISASSEMBLY, INSPECTION AND REPAIR**
- **ALL ADJUSTMENTS MUST BE SEALED**

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

POWER BOILERS- PRESSURES LESS THAN 400 PSIG

"Manual check every 6 month; pressure test annually to verify nameplate set pressure or as determined by operating experience as verified by testing history."

The National Board of Boiler and Pressure Vessel Inspectors

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

POWER BOILERS- PRESSURES GREATER THAN 400 PSIG

"Pressure test to verify nameplate set pressure every three years or as determined by operating experience as verified by testing history."

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

HIGH TEMPERATURE HOT-WATER BOILERS

"Pressure test annually to verify nameplate set pressure or as determined by operating experience as verified by testing history. For safety reasons, removal and testing on a qualified test bench is recommended."

The National Board of Boiler and Pressure Vessel Inspectors

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

LOW PRESSURE STEAM HEATING BOILERS

"Manual check quarterly; pressure test annually prior to steam heating season to verify nameplate set pressure."

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

HOT WATER HEATING BOILERS

"Manual check quarterly; pressure test annually prior to heating season to verify nameplate set pressure."

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

WATER HEATERS

"Manual check every two months. Due to the relatively low cost of safety valves for this service; it is recommended that a defective valve be replaced with a new valve if a repair or resetting is indicated."

The National Board of Boiler and Pressure Vessel Inspectors

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

PRESSURE VESSELS AND PIPING

"Frequency of test and inspection is greatly dependent on the nature of the contents and operation of the system and only general recommendations can be given."

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

PRESSURE VESSELS AND PIPING

Service	Inspection Frequency
Steam	Annual
Air and Clean Dry Gases	Every three years
Pressure relief valves in combination with rupture disks	Every five years
Propane, Refrigerant	Every five years
All Others	Per inspection history

The National Board of Boiler and Pressure Vessel Inspectors

2.5.8 RECOMMENDED INSPECTION AND TEST FREQUENCIES FOR PRESSURE RELIEF DEVICES

HOW TO ESTABLISH FREQUENCIES?

Jurisdictional Requirements

Consultation With Insurance Underwriters

Records Of Test Data & Inspection

Manufacturer's Recommendations

Operating History Of System

Results Of Visual Inspections

Common Discharge Headers

Outage Schedules

Critical Nature Of System

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.2 GENERAL REQUIREMENTS

"a) Repair of a pressure relief valve is considered to include the disassembly, replacement, re-machining, or cleaning of any critical part, lapping of a seat and disc, reassembly, adjustment, testing or other operation that may affect the flow passage, capacity, function or pressure-retaining integrity."

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.2 GENERAL REQUIREMENTS

"b) Conversion, changes or adjustments affecting critical parts are also considered repairs. The scope of the conversions may include changes in service fluid and changes such as bellows, soft seats and other changes that may affect Type/Model number provided such changes are recorded on the document as require for a quality system and the repair nameplate."

PART 3 SUPPLEMENT 7
S7.2 GENERAL REQUIREMENTS

"c) The scope of repair activities shall not include changes in ASME Code."

WHEN COMPLETED, THE VALVE'S CONDITION AND PERFORMANCE SHALL BE EQUIVALENT TO THE STANDARDS FOR NEW VALVES.

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.5 REPLACEMENT PATS FOR PRESSURE RELIEF DEVICES

"a) Critical parts shall be fabricated by the valve manufacturer or to the manufacturer's specifications. Critical parts are those that may affect the valve flow passage, capacity, function, or pressure retaining integrity.

b) Critical parts not fabricated by the valve manufacturer shall be supplied with material test certification for the material used to fabricate the part."

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.5 REPLACEMENT PATS FOR PRESSURE RELIEF DEVICES

3) Receiving records for replacement critical parts obtained from a source other than the valve manufacturer or assembler of the valve type shall include a *Certificate of Compliance*……."

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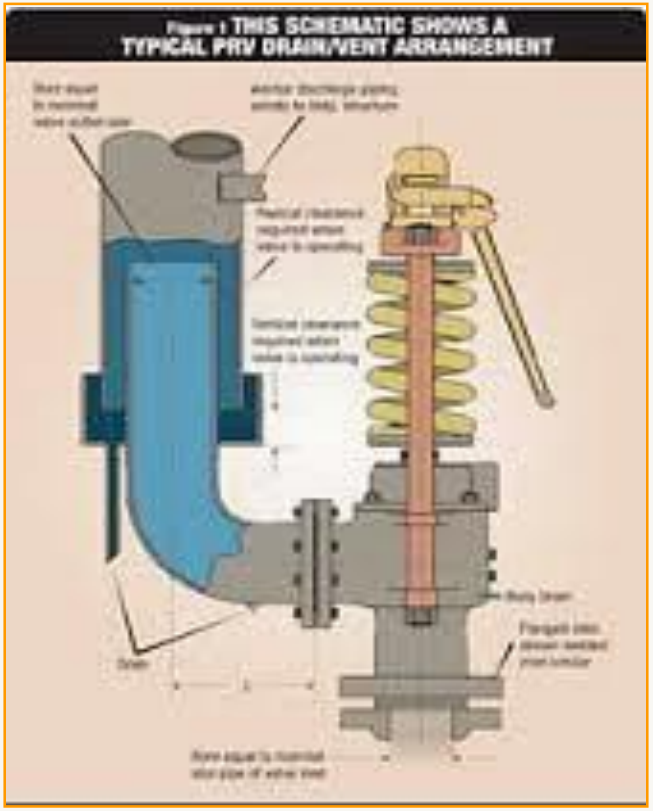
VISUAL IN SERVICE INSPECTION

Inspect Inlet and Discharge Piping for Code Compliance

Verify Discharge Piping is Draining

Verify Inlet/Discharge Piping Is Not Binding or Placing Stress on the Valve Body or Connections



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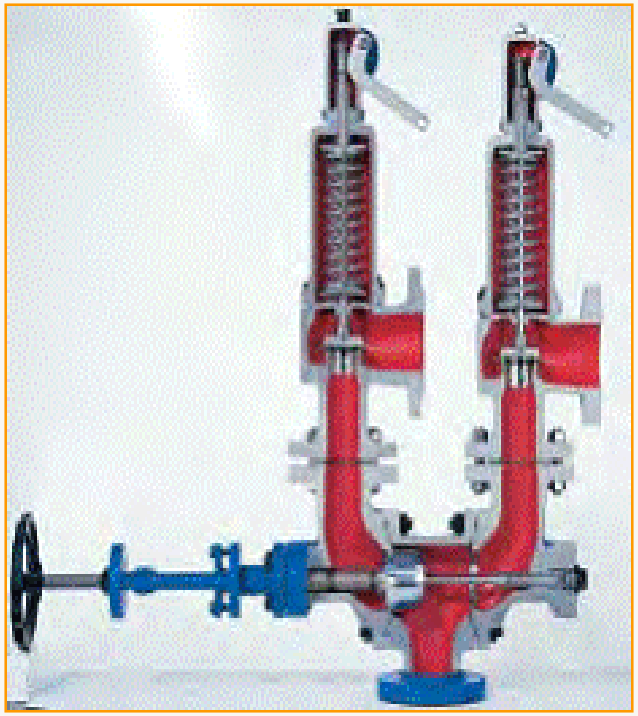
VISUAL IN SERVICE INSPECTION

Check Condition of Inlet/Discharge Piping Supports

Verify No Block Valves on Valve Inlet

Inspect and Verify Function of Changeover Valve if Present



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VALVE IN SERVICE INSPECTION

Current Nameplate Marking or Stamping

Verify Nameplate Capacity

Check for Identification, Presence and Integrity of Seal

Check for Evidence of Leaking

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VALVE IN SERVICE INSPECTION

Bolting Condition and Tightness

Deposits or Material Buildup

Evidence of Rust or Corrosion

Damaged or Misapplied Parts

Verify No Obstructions for Proper Valve Operation

Bonnet Vent is Open (applies only to bellows valves)

No Adverse Findings--Return Valve to Service Till Next Inspection or Test Interval

PRV's are Mechanical Devices that Require Periodic Maintenance Even Though External Inspection and Test Results Indicate Acceptable Performance

Service Interval of No More Than Three Inspection Intervals or Ten years, Whichever is Less, Is Recommended to Maintain Device Condition

Service Records with Test Results and Finding Should be Maintained for all Overprotection devices.

Reference NBIC Part 2.5.8

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.10 GUIDE TO JURISDICTIONS FOR AUTHORIZATION OF OWNER-USERS TO MAKE ADJUSTMENTS TO PRESSURE RELIEF VAVLES

"The Jurisdiction may authorize properly trained and qualified employees of boiler and pressure owner-users or their designees to restore set pressure and/or performance of pressure relief valves. All external adjustments shall be resealed with a seal identifying the responsible organization and a metal tag that identifies the organization and date the adjustment shall be installed."

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.10 GUIDE TO JURISDICTIONS FOR AUTHORIZATION OF OWNER-USERS TO MAKE ADJUSTMENTS TO PRESSURE RELIEF VAVLES

Owners-users or their designees must establish a documented in-house training program

Owners-users or their designees must document the evaluation and acceptance of an employee's or designee's qualifications

Owners-users or their designees must establish a written quality system including: calibration test equipment; valve testing, setting and sealing and valve marking

The National Board of Boiler and Pressure Vessel Inspectors

PART 3 SUPPLEMENT 7
S7.10 GUIDE TO JURISDICTIONS FOR AUTHORIZATION OF OWNER-USERS TO MAKE ADJUSTMENTS TO PRESSURE RELIEF VAVLES

"Only External Adjustments to Restore the Required Set Pressure and/or Performance of a Pressure Relief Valve shall be made under the Provisions of S7.10.1(a)"

WHO SHOULD REPAIR MY VALVES?

State of Kansas Boiler Safety Act Section 49-50-10
Safety Valve Repair

All ASME Code Section I "V" and Section VIII "UV" shall be repaired in accordance with the NBIC "VR" program

Repair Organizations in possession of a "VR" certificate of authorization

WHAT DO YOU NEED TO REPAIR VALVES?

Training

Practice

Technical Documentation including

Critical dimensions, spring charts and repair procedures

Specialized Tooling

Certified Test Equipment

WHAT TO LOOK FOR IN A REPAIR SHOP?

NBBI "VR" Certificate Holder

National Board Approved Quality Assurance Manual

Established Personnel Qualification and Training System

Test Stands Benchmarked Against Certified Flow Loops

VALVE SERVICE ORGANIZATION

PROVEN ABILITY TRACK RECORD

FACTORY TRAINING/AFFILIATION

UP TO DATE CRITICAL DIMENSIONS

UP TO DATE REPAIR PROCEDURES

FACTORY TRAINED TECHNICIANS

ACCESS TO NATIONWIDE PARTS & VALVE INVENTORIES

USE OF OEM PARTS

VALVE SERVICE ORGANIZATION

HIGH CAPACITY TEST STANDS

AUXILLIARY LIFT DEVICE

MOBILE REPAIR FACLITY

24/7 SERVICE

FULL TIME TECHNICIANS

ASSET MANAGEMENT SYSTEM

OUTREACH TRAINING

SAFETY RECORD

REDUCTION IN SUPPLIER BASE

VALVE REPAIR COSTS

1/2" TO 2" NPT CONNECTIONS	REPLACE
(non standard materials)	REPAIR
2" AND ABOVE	REPAIR

If the valve can be removed: Shop Repair

If the valve is welded in-place: Field Repair

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DOCUMENTATION

Consolidated Valves — Sizing and Selection Report

Quote No.:	20140109	RFQ No.:	
Rev. No.:	0	Customer PO:	
Prepared by:	PSL	Serial No.:	
Checked by:		Sizing Rev. No.	
Spec. Sheet No.:			

Customer Information
Name:
Project:
End User:
Item Number: 1
3L4

Notes

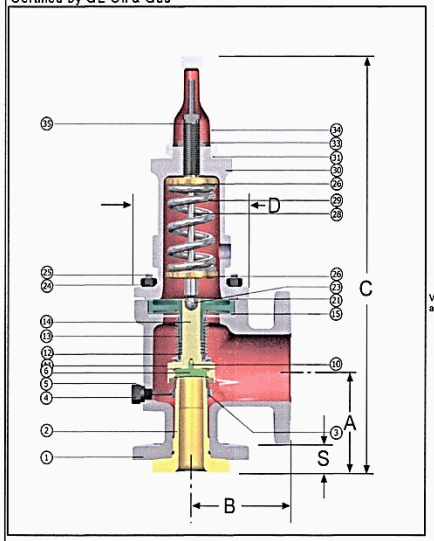
Tag No.:	PSV-2624					
P&ID Number - Location	-					
Valve Type	1905-30L-1-S4-MS-31-RF-GS-HP					
Gag Required	NO					
Inlet Connection						
Specified	3	in	Flg	150#	Rf	
Selected	3	in	Flg	150#	Rf	
Outlet Connection						
Specified	4	in	Flg	150#	Rf	
Selected	4	in	Flg	150#	Rf	
Sizing Data						
Design Code	ASME Section VIII					
Sizing Basis	Single Fluid - Required Area					
Fluid	METHYL ALCOHOL					
Fluid State	Gas / Vapour					
M	32.04					
Z	1					
k	1.256					
C	343					
Kd (vapor) Kd (liquid)	0.855					
Kb Kw	1					
Ksh Kn						
G Density @ P1						
Viscosity Kv						
Overpressure Accumulation	10 %		10%			
Kc Spring No	1		0305SY			
Pressure						
Operating Set	40		50 Psi (g)			
MAWP CDTP	50		50 Psi (g)			
Flowing	69.7		Psi (a)			
Superimposed Minimum	0		Psi (g)			
Superimposed Maximum	0		Psi (g)			
Builtup Total BP	5.9		5.9 Psi (g)			
Barometric	14.7		Psi (a)			
TEMPERATURE						
Operating	215 Deg. F					
Relieving	276 Deg. F					
Design	366 Deg. F					
Flow Area						
Required	3.317in2					
Selected Designation	3.317in2		L			
Standard	ASME Certified					
Capacity						
Required						
Selected	14146.4 Lb/Hr					
Nameplate	3628 SCFM					
Reaction Force	106 lbf					
Noise Level	134 DBa @ 3 Ft					

Thursday, January 09, 2014 SRVSpeQ v2.13

Consolidated Valves — Dimensional Drawing and Bill of Material

Tag Number	PSV-2624								
Valve Type	1905-30L-1-S4-MS-31-RF-GS-HP								
P&ID No - Location	-					Item Number:	1	Client	
Spec Sheet Number						Rev. Number		RFQ No.:	
Inlet	3	in	Flg	150#	Rf	Area	3.317 in2	Project:	
Outlet	4	in	Flg	150#	Rf	Set pressure	50 Psi (g)	P.O. No.	

Certified by GE Oil & Gas



Valve picture is for reference only and is not to scale.

DIMENSIONS & WEIGHT

A:155.6 mm -- 6-1/8 in
B:165.1 mm -- 6-1/2 in
C:730.3 mm -- 28-3/4 in
D:225.4 mm -- 8-7/8 in
S:36.5 mm -- 1-7/16 in
WEIGHT:63.5 kg -- 140 lbs

BILL OF MATERIALS

PARTNAME	MATERIAL
1) BASE	ASME SA351 CF8M STAINLESS STEEL
2) NOZZLE	316 STAINLESS STEEL
3) ADJUSTING RING	316 STAINLESS STEEL
4) ADJUSTING RING PIN	316 STAINLESS STEEL
5) ADJ. RING PIN GASKET	MONEL
9) DISC	316 STAINLESS STEEL
10) DISC RETAINER	INCONEL X-750
11) BELLOWS GASKET	MONEL
12) BELLOWS ASSEMBLY	
BELLOWS NUT	316L STAINLESS STEEL
BELLOWS FLANGE	316L STAINLESS STEEL
BELLOWS	INCONEL 625 LCF
13) GUIDE (BELLOWS)	316 STAINLESS STEEL
14) DISC HOLDER	316 STAINLESS STEEL
15) GUIDE GASKET	MONEL
21) BONNET GASKET (BELLOWS)	MONEL
23) SPINDLE RETAINER	INCONEL X-750
24) STUD NUTS	ASME SA194 8M STAINLESS STEEL
25) BASE STUDS	ASME SA193 B8M STAINLESS STEEL
26) SPRING WASHER (BELLOWS)	316 STAINLESS STEEL
28) SPINDLE (BELLOWS)	316 STAINLESS STEEL
29) SPRING	316 STAINLESS STEEL (0305SY)
30) BONNET	ASME SA351 CF8M STAINLESS STEEL
31) CAP GASKET	MONEL
33) ADJUSTING SCREW NUT (BELLOWS)	316 STAINLESS STEEL
34) CAP	316 STAINLESS STEEL
35) ADJUSTING SCREW (BELLOWS)	316 STAINLESS STEEL
NOT SHOWN	
BASE PLUG	316 STAINLESS STEEL

Thursday, January 09, 2014 SRVSpeQ v2.13

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DOCUMENTATION

New Relief Valve Data Sheet
400 Russell blvd St. Louis, Mo. 63104

Owner PQ CORPORATION
Plant Kansas City

Work Ticket 618200-1 **Sales Order** 618200
Customer PO 45175558 **Customer I. D.** PSV-2624

VALVE DATA

Model Number	1905-30LC-1-S4-MS-31-RF-GS-HP	Valve Size	3 L 4 = 2.853 IN^2
Serial Number	SB88507	Service	VAPOR/SCFM
Trim Material	STAINLESS STEEL	Cap Type	SCREWED
Soft Seat Matl			
Set Pressure	50 PSIG	Operating Temp	60 F
Cold Diff Set Press	50 PSIG	Req'd Blow Down %	=
Back Pressure	PSIG	ASME Capacity	3628 SCFM
Restricted Lift	IN	Mfg Lift	IN
ASME Code	VIII/UV	Spring Number	0305SY
Material	STAINLESS STEEL	From / To	42 to 50

ASSEMBLER'S INFORMATION

Comment

Assembled By BARR NICK Date Assembled 2014/02/19

TEST RESULTS

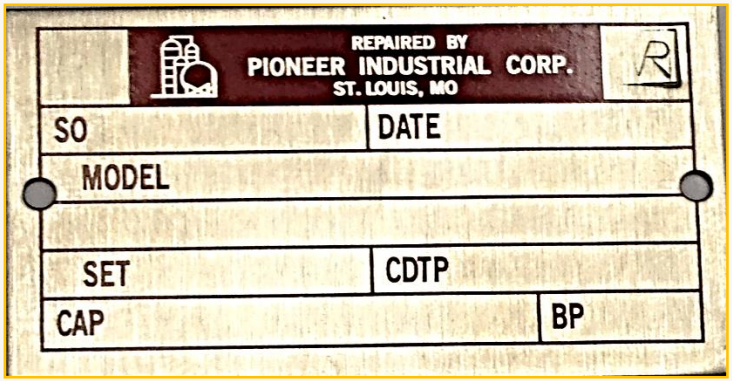
Date Tested	2014/02/20	Test Media	AIR/SCFM
Tested By	NESSER JEREMY	Test Method	FULL FLOW
	THEIS SHANNON	Gauge 1	S17 1/14
		Gauge 2	S15 12/13
		Gauges Calibrated Using Equipment Traceable to NIST	
Set	52 PSIG		Notches
Reseat Press	43 PSIG		Notches
Seats Tight	45 PSIG		IN
BP Test /	30 @ PSI		IN

FINAL INSPECTION

Certified Individual JAYCOX RUSTY
Date Completed 2014/02/20
Hydro Test Stamped Yes

Check List / Quality Control

All Testing Complete	YES
All VK Fields Complete	YES
PSV Painted	NO
PSV Sealed	YES
MFG Plate Attached	YES
VR Stamp Attached	NO
Test Only Tag Attached	NO
Customer ID Attached	YES



INDUSTRY TRENDS

INCREASED JURISDICTION OVERSITE

STRICTER NATIONAL BOARD AUDITS

LONGER REPAIR INTERVALS

INCREASED APPLICATION OF PILOT OPERATED VALVES FOR EMISSION CONTROL

APPROVAL OF PILOT VALVES FOR SEC I – ON BOILER SYSTEMS

OUTSOURCING • DOWNSIZING
25 YEARS OF EXCELLENCE
VENDOR REDUCTION

67th Annual
Oct. 18-21, 2016

Kansas Department of Labor

Safety & Health Conference

"Safety is not an object nor something you can measure! It's a culture, a value."

GE Oil & Gas

Flow and Process Technologies
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THE NATIONAL BOARD
OF
BOILER & PRESSURE VESSEL INSPECTORS

Certificate of Authorization

VR®

This is to certify that

Pioneer Industrial Corporation
2611 Southwest Blvd.
Kansas City, MO 64108
UNITED STATES

is authorized to use the VALVE REPAIR SYMBOL in accordance with the applicable rules of the National Board.

The scope of Authorization is limited as follows:

Location:	VR Special Process:
Shop	Machining

ASME Code Section:	Test Media:
VIII	Air/Gas

"VR" CERTIFICATE NUMBER: 635
ISSUE DATE: June 11, 2012
EXPIRATION February 11, 2015

Executive Director

QUESTIONS & DISCUSSION

ASME
UV

CERTIFICATE OF AUTHORIZATION

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the au gra d by ificate of Authorization are subject to the provisions of the ag t s for the application. Any construction stamped with this certification ma h b built strictly in accordance with the provisions of the ASME Boiler an ssel

COMPANY:

Pioneer Industrial Corporation
2611 Southwest Blvd.
Kansas City, Missouri 64108

SCOPE:

Assembly of pressure vessel pressure relief valves at the above location only
(This authorization does not cover welding or brazing)

AUT RIZED: 4, 2012
EXP S: 4, 2015
CERT CATE MB 4

Vice President, Conformity Assessment

Director, Conformity Assessment

The American Society of Mechanical Engineers